

SEQUENCE LISTING

<110> LUDWIG INSTITUTE FOR CANCER RESEARCH
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 OLD, LLOYD
 JUNGBLUTH, ACHIM

<120> A34 AND A33-LIKE 3 DNA, PROTEINS, ANTIBODIES THERETO
 AND METHODS OF TREATMENT USING SAME

<130> 029065.51088WO

<140>

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<150> 60/420,285

<151> 2002-10-23

<160> 50

<170> PatentIn Ver. 2.1

<210> 1

<211> 387

<212> PRT

<213> Homo sapiens

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Val Thr Val Gly Ser Asn Val Thr Leu Ile Cys Ile Tyr Thr Thr Thr
 35 40 45

Val Ala Ser Arg Glu Gln Leu Ser Ile Gln Trp Ser Phe Phe His Lys
 50 55 60

Lys Glu Met Glu Pro Ile Ser Ile Tyr Phe Ser Gln Gly Gly Gln Ala
 65 70 75 80

Val Ala Ile Gly Gln Phe Lys Asp Arg Ile Thr Gly Ser Asn Asp Pro
 85 90 95

Gly Asn Ala Ser Ile Thr Ile Ser His Met Gln Pro Ala Asp Ser Gly
 100 105 110

Ile Tyr Ile Cys Asp Val Asn Asn Pro Pro Asp Phe Leu Gly Gln Asn
 115 120 125

Gln Gly Ile Leu Asn Val Ser Val Leu Val Lys Pro Ser Lys Pro Leu
 130 135 140

Cys Ser Val Gln Gly Arg Pro Glu Thr Gly His Thr Ile Ser Leu Ser
 145 150 155 160

Cys Leu Ser Ala Leu Gly Thr Pro Ser Pro Val Tyr Tyr Trp His Lys
 165 170 175
 Leu Glu Gly Arg Asp Ile Val Pro Val Lys Glu Asn Phe Asn Pro Thr
 180 185 190
 Thr Gly Ile Leu Val Ile Gly Asn Leu Thr Asn Phe Glu Gln Gly Tyr
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 Tyr Gln Cys Thr Ala Ile Asn Arg Leu Gly Asn Ser Ser Cys Glu Ile
 210 215 220
 Asp Leu Thr Ser Ser His Pro Glu Val Gly Ile Ile Val Gly Ala Leu
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 Ile Gly Ser Leu Val Gly Ala Ala Ile Ile Ile Ser Val Val Cys Phe
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 Ala Arg Asn Lys Ala Lys Ala Lys Ala Lys Glu Arg Asn Ser Lys Thr
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 Ile Ala Glu Leu Glu Pro Met Thr Lys Ile Asn Pro Arg Gly Glu Ser
 275 280 285
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 Glu Pro Lys Pro Thr Gln Glu Pro Ala Pro Glu Pro Ala Pro Gly Ser
 325 330 335
 Glu Pro Met Ala Val Pro Asp Leu Asp Ile Glu Leu Glu Leu Glu Pro
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<210> 2

<211> 319

<212> PRT

<213> Homo sapiens

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 20 25 30

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His	Gly	Glu	Leu	Tyr	Lys	Asn	Arg	Val	Ser	Ile	Ser	Asn	Asn	Ala	Glu
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Gln	Ser	Asp	Ala	Ser	Ile	Thr	Ile	Asp	Gln	Leu	Thr	Met	Ala	Asp	Asn
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210						215				220					
Thr	Val	Ala	Val	Arg	Ser	Pro	Ser	Met	Asn	Val	Ala	Leu	Tyr	Val	Gly
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<212> DNA

<213> Homo sapiens

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<210> 4

<211> 402

<212> PRT

<213> Homo sapiens

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      20              25              30

Gln Val Ser Val Val Gln Val Thr Ile Pro Asp Gly Phe Val Asn Val
      35              40              45

Thr Val Gly Ser Asn Val Thr Leu Ile Cys Ile Tyr Thr Thr Thr Val
      50              55              60

Ala Ser Arg Glu Gln Leu Ser Ile Gln Trp Ser Phe Phe His Lys Lys
      65              70              75              80

Glu Met Glu Pro Ile Ser Ile Tyr Phe Ser Gln Gly Gly Gln Ala Val

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Asn	Ala	Ser	Ile	Thr	Ile	Ser	His	Met	Gln	Pro	Ala	Asp	Ser	Gly	Ile				
		115					120					125							
Tyr	Ile	Cys	Asp	Val	Asn	Asn	Pro	Pro	Asp	Phe	Leu	Gly	Gln	Asn	Gln				
	130					135					140								
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			325						330					335					
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Pro	Met	Ala	Val	Pro	Asp	Leu	Asp	Ile	Glu	Leu	Glu	Leu	Glu	Pro	Glu				
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Thr	Gln	Ser	Glu	Leu	Glu	Pro	Glu	Pro	Glu	Pro	Glu	Pro	Glu	Ser	Glu				
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<210> 5

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<212> DNA

<213> Homo sapiens

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ccaggatcag agcctatggc agtgccctgac cttgacatcg agctggagct ggagccagaa 960
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1045

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<211> 348

<212> PRT

<213> Homo sapiens

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      20              25              30
Glu Met Glu Pro Ile Ser Ile Tyr Phe Ser Gln Gly Gly Gln Ala Val
      35              40              45
Ala Ile Gly Gln Phe Lys Asp Arg Ile Thr Gly Ser Asn Asp Pro Gly
      50              55              60
Asn Ala Ser Ile Thr Ile Ser His Met Gln Pro Ala Asp Ser Gly Ile
      65              70              75              80
Tyr Ile Cys Asp Val Asn Asn Pro Pro Asp Phe Leu Gly Gln Asn Gln
      85              90              95
Gly Ile Leu Asn Val Ser Val Leu Val Lys Pro Ser Lys Pro Leu Cys
      100             105             110
Ser Val Gln Gly Arg Pro Glu Thr Gly His Thr Ile Ser Leu Ser Cys
      115             120             125

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Leu Ser Ala Leu Gly Thr Pro Ser Pro Val Tyr Tyr Trp His Lys Leu
 130 135 140
 Glu Gly Arg Asp Ile Val Pro Val Lys Glu Asn Phe Asn Pro Thr Thr
 145 150 155 160
 Gly Ile Leu Val Ile Gly Asn Leu Thr Asn Phe Glu Gln Gly Tyr Tyr
 165 170 175
 Gln Cys Thr Ala Ile Asn Arg Leu Gly Asn Ser Ser Cys Glu Ile Asp
 180 185 190
 Leu Thr Ser Ser His Pro Glu Val Gly Ile Ile Val Gly Ala Leu Ile
 195 200 205
 Gly Ser Leu Val Gly Ala Ala Ile Ile Ile Ser Val Val Cys Phe Ala
 210 215 220
 Arg Asn Lys Ala Lys Ala Lys Ala Lys Glu Arg Asn Ser Lys Thr Ile
 225 230 235 240
 Ala Glu Leu Glu Pro Met Thr Lys Ile Asn Pro Arg Gly Glu Ser Glu
 245 250 255
 Ala Met Pro Arg Glu Asp Ala Thr Gln Leu Glu Val Thr Leu Pro Ser
 260 265 270
 Ser Ile His Glu Thr Gly Pro Asp Thr Ile Gln Glu Pro Asp Tyr Glu
 275 280 285
 Pro Lys Pro Thr Gln Glu Pro Ala Pro Glu Pro Ala Pro Gly Ser Glu
 290 295 300
 Pro Met Ala Val Pro Asp Leu Asp Ile Glu Leu Glu Leu Glu Pro Glu
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 Pro Gly Val Val Val Glu Pro Leu Ser Glu Asp Glu
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<212> DNA

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<210> 8

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<212> PRT

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      20             25             30

Tyr Leu Ala Glu Gly Asp Asn Val Arg Leu Gly Cys Pro Tyr Val Leu
      35             40             45

Asp Pro Glu Asp Tyr Gly Pro Asn Gly Leu Asp Ile Glu Trp Met Gln
      50             55             60

Val Asn Ser Asp Pro Ala His His Arg Glu Asn Val Phe Leu Ser Tyr
      65             70             75             80

Gln Asp Lys Arg Ile Asn His Gly Ser Leu Pro His Leu Gln Gln Arg
      85             90             95

Val Arg Phe Ala Ala Ser Asp Pro Ser Gln Tyr Asp Ala Ser Ile Asn
      100            105            110

Leu Met Asn Leu Gln Val Ser Asp Thr Ala Thr Tyr Glu Cys Arg Val
      115            120            125

Lys Lys Thr Thr Met Ala Thr Arg Lys Val Ile Val Thr Val Gln Ala
      130            135            140

Arg Pro Ala Val Pro Met Cys Trp Thr Glu Gly His Met Thr Tyr Gly
      145            150            155            160

Asn Asp Val Val Leu Lys Cys Tyr Ala Ser Gly Gly Ser Gln Pro Leu
      165            170            175

Ser Tyr Lys Trp Ala Lys Ile Ser Gly His His Tyr Pro Tyr Arg Ala
      180            185            190

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Gly Ser Tyr Thr Ser Gln His Ser Tyr His Ser Glu Leu Ser Tyr Gln
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 260 265 270
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 275 280 285
 Gln Gly Gln Arg Ala Arg Gln Pro Arg His Pro Pro Pro Gly Val Pro
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 Phe Leu Ser Tyr Gln Asp Lys Arg Ile Asn His Gly Ser Leu Pro His
 50 55 60
 Leu Gln Gln Arg Val Arg Phe Ala Ala Ser Asp Pro Ser Gln Tyr Asp
 65 70 75 80

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Ala Ser Ile Asn Leu Met Asn Leu Gln Val Ser Asp Thr Ala Thr Tyr
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Glu Cys Arg Val Lys Lys Thr Thr Met Ala Thr Arg Lys Val Ile Val
100 105 110

Thr Val Gln Ala Arg Pro Ala Val Pro Met Cys Trp Thr Glu Gly His
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Met Thr Tyr Gly Asn Asp Val Val Leu Lys Cys Tyr Ala Ser Gly Gly
130 135 140

Ser Gln Pro Leu Ser Tyr Lys Trp Ala Lys Ile Ser Gly His His Tyr
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Pro Tyr Arg Ala Gly Ser Tyr Thr Ser Gln His Ser Tyr His Ser Glu
165 170 175

Leu Ser Tyr Gln Glu Ser Phe His Ser Ser Ile Asn Gln Gly Leu Asn
180 185 190

Asn Gly Asp Leu Val Leu Lys Asp Ile Ser Arg Ala Asp Asp Gly Leu
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Tyr Gln Cys Thr Val Ala Asn Asn Val Gly Tyr Ser Val Cys Val Val
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Glu Val Lys Val
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<213> Homo sapiens

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Asn Lys Asn Tyr Ile His Gly Glu Leu Tyr Lys Asn Arg Val Ser Ile
50 55 60

Ser Asn Asn Ala Glu Gln Ser Asp Ala Ser Ile Thr Ile Asp Gln Leu
65 70 75 80

Thr Met Ala Asp Asn Gly Thr Tyr Glu Cys Ser Val Ser Leu Met Ser
85 90 95

Asp Leu Glu Gly Asn Thr Lys Ser Arg Val Arg Leu Leu Val Leu Val
100 105 110

Pro Pro Ser Lys Pro Glu Cys Gly Ile Glu Gly Glu Thr Ile Ile Gly

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115		120		125
Asn Asn Ile Gln Leu Thr Cys Gln Ser Lys Glu Gly Ser Pro Thr Pro				
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Gln Tyr Ser Trp Lys Arg Tyr Asn Ile Leu Asn Gln Glu Gln Pro Leu				
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<400> 12
 aaggtttcac taacacactg 20

<210> 13
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 primer

<400> 13
 gaaggagatg gagccaattt ctatt 25

<210> 14
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 14
 cctgtaattc gatctttaaa ttgcc

25

<210> 15
 <211> 31
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 15
 cttttctcaa ggtggacaag ctgtagccat c

31

<210> 16
 <211> 600
 <212> DNA
 <213> Homo sapiens

<400> 16
 ggtagtgcac actgccagt tttcaaaaa gagtaacata tccagagttt gttcacacag 60
 aaatgaatgc ttttttagctt cataacccct gtgcccttcc cgtgagcccc atctccccag 120
 gaaacgatat agtaccaatt tactaactta atttgtaaaa ggagggttagt gaatcaattc 180
 tgtaagactc atggaaatat ttgaaattaa ttagccttgt cagcttttat ttgcataggc 240
 tctcttccaa ccataatcccc cagcccaagt acaacgtttt agtaagattg attttaaaca 300
 atgagactta gagaatctgt gtacaaggag cttgaataat ttaaatgcgt gggtttatta 360
 ttaacacagt agcaaatata tcaaggaaac acgccccatg aaaagtgttt caaagaaaca 420
 caaatctgta ctgaaaaaag tctatacgca ataagtaagc ccaaagaggc atgtttgctt 480
 ggcgatgccc agcagataag ccaggcaaac ctcggtgtga tcgaagaagc caatttgaga 540
 ctcagcctag tccaggcaag ctactggcac ctgctgctct caactaacct ccacacaatg 600

<210> 17
 <211> 600
 <212> DNA
 <213> Mus musculus

<400> 17
 ggatttgctg acagtccaat cactggaaa gtttactgga aatgccttat tagagttgag 60
 attttttagcc tgggactggg acaaattatt acataggatg aaggagaaag aaaccaggga 120
 gaccattcag gaagctgttg ctttaggcta acgtaatatc tagaacaaaa tgggaagcagc 180
 aggttggaga tgggacaaat ctaccattca ctttagaagc agcaggacca agatatctta 240
 tgggaagaac tggaggaggc cctccaagta caactttctt tttttaaaaa gggttgattt 300
 taaacaatgt aacctaagag aatctgtgta caaagaactg aaaggattta agtgcgtggt 360
 ttattattaa cacagtagca aatatatcaa ggggacacac cccgggggaa aagggtttca 420
 aataaacaca gatttggtca gagagaactc agtgcccaat aagcaagcgt aaggaggcct 480
 atttgcttgg tgatgccag ccgataagcc aggcgtgtgac tgaagaagcc aatttgaaac 540

tcagcctagt tcaggcagcc ttcggactgg cacctgctgc tccaagcgac tttcagcatg 600

<210> 18

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 18

tgcccatgtg ctggacagag

20

<210> 19

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 19

cacgttggtg gccactgtgc

20

<210> 20

<211> 399

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1) .. (399)

<400> 20

atg	agg	tgc	ctt	gtt	cag	ttt	ctg	ggg	ctg	ctt	gtg	ctc	tgg	atc	cct	48
Met	Arg	Cys	Leu	Val	Gln	Phe	Leu	Gly	Leu	Leu	Val	Leu	Trp	Ile	Pro	
1				5				10					15			

gga	gcc	att	ggg	gat	att	gtg	atg	act	cag	gct	gca	ccc	tct	gtc	cct	96
Gly	Ala	Ile	Gly	Asp	Ile	Val	Met	Thr	Gln	Ala	Ala	Pro	Ser	Val	Pro	
			20					25					30			

gtc	act	cct	gga	gag	tca	gta	tcc	atc	tcc	tgc	agg	tct	agt	acg	agt	144
Val	Thr	Pro	Gly	Glu	Ser	Val	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Thr	Ser	
			35				40					45				

ctc	ctg	cat	agt	aat	ggc	aac	act	tac	ttg	tat	tgg	ttc	ctg	cag	agg	192
Leu	Leu	His	Ser	Asn	Gly	Asn	Thr	Tyr	Leu	Tyr	Trp	Phe	Leu	Gln	Arg	
		50				55					60					

cca	ggc	cag	tct	cct	cag	ctc	ctg	ata	tat	cgg	atg	tcc	aac	ctt	gcc	240
Pro	Gly	Gln	Ser	Pro	Gln	Leu	Leu	Ile	Tyr	Arg	Met	Ser	Asn	Leu	Ala	
	65				70					75					80	

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tca gga gtc cca gac agg ttc agt ggc agt ggg tca gga act gct ttc 288
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe
      85                      90                      95

aca ctg aga atc agt aga gtg gag gct gag gat gtg ggt att tat tac 336
Thr Leu Arg Ile Ser Arg Val Glu Ala Glu Asp Val Gly Ile Tyr Tyr
      100                      105                      110

tgt atg caa cat cta gaa tat cct ttc acg ttc gga ggg ggg acc aaa 384
Cys Met Gln His Leu Glu Tyr Pro Phe Thr Phe Gly Gly Gly Thr Lys
      115                      120                      125

ctg gaa ata aaa cgg
Leu Glu Ile Lys Arg
      130

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<210> 21
 <211> 133
 <212> PRT
 <213> Mus musculus

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<400> 21
Met Arg Cys Leu Val Gln Phe Leu Gly Leu Leu Val Leu Trp Ile Pro
 1              5              10              15

Gly Ala Ile Gly Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Pro
      20              25              30

Val Thr Pro Gly Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Thr Ser
      35              40              45

Leu Leu His Ser Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg
      50              55              60

Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala
      65              70              75              80

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe
      85              90              95

Thr Leu Arg Ile Ser Arg Val Glu Ala Glu Asp Val Gly Ile Tyr Tyr
      100              105              110

Cys Met Gln His Leu Glu Tyr Pro Phe Thr Phe Gly Gly Gly Thr Lys
      115              120              125

Leu Glu Ile Lys Arg
      130

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<210> 22
 <211> 423
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS

<222> (1)..(423)

<400> 22

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atg aac ttt ggg ttc agc ttg gtt ttc ctt gcc ctt att tta aaa ggt      48
Met Asn Phe Gly Phe Ser Leu Val Phe Leu Ala Leu Ile Leu Lys Gly
  1             5             10             15

gtc cag tgt gag gtg gag ctg gtg gag tct ggg gga ggc cta gtg cag      96
Val Gln Cys Glu Val Glu Leu Val Glu Ser Gly Gly Gly Leu Val Gln
          20             25             30

cct gga ggg tcc ctg aaa ctc tcc tgt gca gcc tct gga ttc acc ttc     144
Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
          35             40             45

agt act ttt ggc atg tct tgg gtt cgc cag act cca gac aag agg ctg     192
Ser Thr Phe Gly Met Ser Trp Val Arg Gln Thr Pro Asp Lys Arg Leu
          50             55             60

gag ttg gtc gca acc att aat agt aat ggt ggt agg acc tat tat cta     240
Glu Leu Val Ala Thr Ile Asn Ser Asn Gly Gly Arg Thr Tyr Tyr Leu
          65             70             75

gac agt gtg aag ggc cga ttc acc atc tcc aga gaa aat gcc aag aac     288
Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Glu Asn Ala Lys Asn
          85             90             95

acc ctg tac ctg caa atg agc agt ctg aag tct gag gac aca gcc atg     336
Thr Leu Tyr Leu Gln Met Ser Ser Leu Lys Ser Glu Asp Thr Ala Met
          100            105            110

tat tac tgt gca aga gat ggg gga cta cta cgg gat tcc gcc tgg ttt     384
Tyr Tyr Cys Ala Arg Asp Gly Gly Leu Leu Arg Asp Ser Ala Trp Phe
          115            120            125

gct tac tgg ggc caa ggg act ctg gtc act gtc tct gca
Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala
          130            135            140

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<210> 23

<211> 141

<212> PRT

<213> Mus musculus

<400> 23

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Met Asn Phe Gly Phe Ser Leu Val Phe Leu Ala Leu Ile Leu Lys Gly
  1             5             10             15

Val Gln Cys Glu Val Glu Leu Val Glu Ser Gly Gly Gly Leu Val Gln
          20             25             30

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
          35             40             45

Ser Thr Phe Gly Met Ser Trp Val Arg Gln Thr Pro Asp Lys Arg Leu
          50             55             60

Glu Leu Val Ala Thr Ile Asn Ser Asn Gly Gly Arg Thr Tyr Tyr Leu

```

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65		70		75		80
Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Glu Asn Ala Lys Asn						
	85			90		95
Thr Leu Tyr Leu Gln Met Ser Ser Leu Lys Ser Glu Asp Thr Ala Met						
	100		105		110	
Tyr Tyr Cys Ala Arg Asp Gly Gly Leu Leu Arg Asp Ser Ala Trp Phe						
	115		120		125	
Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala						
	130		135		140	

<210> 24

<211> 399

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1) .. (399)

<400> 24

atg agg tgc ctt gct cag ctt ctg ggg ctg ctt gtg ctc tgg atc cct	48
Met Arg Cys Leu Ala Gln Leu Leu Gly Leu Leu Val Leu Trp Ile Pro	
1 5 10 15	
gga gcc att ggg gat att gtg atg act cag gct gca ccc tct gta cct	96
Gly Ala Ile Gly Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Pro	
20 25 30	
gtc act cct gga gag tca gta tcc atc tcc tgc agg tct agt acg agt	144
Val Thr Pro Gly Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Thr Ser	
35 40 45	
ctc ctg cat ggt aat ggc aac act tac ttg tat tgg ttc ctg cag agg	192
Leu Leu His Gly Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg	
50 55 60	
cca ggc cag tct cct cag ctc ctg ata tat cgg atg tcc aac ctt gcc	240
Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala	
65 70 75 80	
tca gga gtc cca gac agg ttc agt ggc agt ggg tca gga act gct ttc	288
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe	
85 90 95	
aca ctg aga atc agt aga gtg gag gct gag gat gtg ggt att tat tac	336
Thr Leu Arg Ile Ser Arg Val Glu Ala Glu Asp Val Gly Ile Tyr Tyr	
100 105 110	
tgt atg cag cat cta gaa tat cct ttc acg ttc gga ggg ggg acc aag	384
Cys Met Gln His Leu Glu Tyr Pro Phe Thr Phe Gly Gly Gly Thr Lys	
115 120 125	
ctg gaa ata aaa cgg	399

17/25

Leu Glu Ile Lys Arg
130

<210> 25
<211> 133
<212> PRT
<213> Mus musculus

<400> 25
Met Arg Cys Leu Ala Gln Leu Leu Gly Leu Leu Val Leu Trp Ile Pro
1 5 10 15
Gly Ala Ile Gly Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Pro
20 25 30
Val Thr Pro Gly Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Thr Ser
35 40 45
Leu Leu His Gly Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg
50 55 60
Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala
65 70 75 80
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe
85 90 95
Thr Leu Arg Ile Ser Arg Val Glu Ala Glu Asp Val Gly Ile Tyr Tyr
100 105 110
Cys Met Gln His Leu Glu Tyr Pro Phe Thr Phe Gly Gly Gly Thr Lys
115 120 125
Leu Glu Ile Lys Arg
130

<210> 26
<211> 423
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1) .. (423)

<400> 26
atg gac ttt ggg ttc agc ttg gtt ttc ctt gcc ctt att tta aaa ggt 48
Met Asp Phe Gly Phe Ser Leu Val Phe Leu Ala Leu Ile Leu Lys Gly
1 5 10 15
gtc cag tgt gag gtg gag ctg gtg gag tct ggg gga ggc tta gtg cag 96
Val Gln Cys Glu Val Glu Leu Val Glu Ser Gly Gly Gly Leu Val Gln
20 25 30
cct gga ggg tcc ctg aaa ctc tcc tgt gca gcc tct gga ttc acc ttc 144
Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe

35					40					45						
agt	agt	tat	ggc	atg	tct	tgg	gtt	cgc	cag	act	cca	gac	aag	agg	ctg	192
Ser	Ser	Tyr	Gly	Met	Ser	Trp	Val	Arg	Gln	Thr	Pro	Asp	Lys	Arg	Leu	
50					55					60						
gag	ttg	gtc	gca	acc	att	aat	agt	aat	ggg	ggg	agg	acc	tat	tat	cta	240
Glu	Leu	Val	Ala	Thr	Ile	Asn	Ser	Asn	Gly	Gly	Arg	Thr	Tyr	Tyr	Leu	
65					70					75					80	
gac	agt	gtg	aag	ggc	cga	ttc	acc	atc	tcc	aga	gac	aat	gcc	aag	aac	288
Asp	Ser	Val	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ala	Lys	Asn	
85					90					95						
acc	ctg	tac	ctg	caa	atg	agc	agt	ctg	aag	tct	gag	gac	aca	gcc	atg	336
Thr	Leu	Tyr	Leu	Gln	Met	Ser	Ser	Leu	Lys	Ser	Glu	Asp	Thr	Ala	Met	
100					105					110						
tat	tac	tgt	gca	aga	gat	ggg	gga	ctc	cta	cga	gat	tcc	gcc	tgg	ttt	384
Tyr	Tyr	Cys	Ala	Arg	Asp	Gly	Gly	Leu	Leu	Arg	Asp	Ser	Ala	Trp	Phe	
115					120					125						
gct	tac	tgg	ggc	caa	ggg	act	ctg	gtc	act	gtc	tct	gca				423
Ala	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ala				
130					135					140						

<210> 27

<211> 141

<212> PRT

<213> Mus musculus

<400> 27

Met	Asp	Phe	Gly	Phe	Ser	Leu	Val	Phe	Leu	Ala	Leu	Ile	Leu	Lys	Gly	
1				5					10					15		
Val	Gln	Cys	Glu	Val	Glu	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	
			20					25					30			
Pro	Gly	Gly	Ser	Leu	Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	
			35				40					45				
Ser	Ser	Tyr	Gly	Met	Ser	Trp	Val	Arg	Gln	Thr	Pro	Asp	Lys	Arg	Leu	
		50				55					60					
Glu	Leu	Val	Ala	Thr	Ile	Asn	Ser	Asn	Gly	Gly	Arg	Thr	Tyr	Tyr	Leu	
	65				70					75					80	
Asp	Ser	Val	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ala	Lys	Asn	
				85					90					95		
Thr	Leu	Tyr	Leu	Gln	Met	Ser	Ser	Leu	Lys	Ser	Glu	Asp	Thr	Ala	Met	
			100					105					110			
Tyr	Tyr	Cys	Ala	Arg	Asp	Gly	Gly	Leu	Leu	Arg	Asp	Ser	Ala	Trp	Phe	
		115					120					125				
Ala	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ala				

130

135

140

<210> 28
 <211> 384
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS
 <222> (1)..(384)

<400> 28
 atg agg gcc cct gct cag att ttt gga ttc ttg ttg ctc tgg ttc cca 48
 Met Arg Ala Pro Ala Gln Ile Phe Gly Phe Leu Leu Leu Trp Phe Pro

1 5 10 15

ggt gcc aga tgt gaa atc cag atg acc cag tct cca tcc tct atg tct 96
 Gly Ala Arg Cys Glu Ile Gln Met Thr Gln Ser Pro Ser Ser Met Ser
 20 25 30

gca tct ctg gga gac aga ata acc atc act tgc cag gca act caa gac 144
 Ala Ser Leu Gly Asp Arg Ile Thr Ile Thr Cys Gln Ala Thr Gln Asp
 35 40 45

att gtt aag aat tta aac tgg tat cag cag aaa cca ggg aaa ccc cct 192
 Ile Val Lys Asn Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Pro Pro
 50 55 60

tca atc ctg atc tat tat gca act gaa ctg gca gaa ggg gtc cca tca 240
 Ser Ile Leu Ile Tyr Tyr Ala Thr Glu Leu Ala Glu Gly Val Pro Ser
 65 70 75 80

agg ttc agt ggc agt ggg tct ggg tca gac tat tct ctg aca atc agc 288
 Arg Phe Ser Gly Ser Gly Ser Gly Ser Asp Tyr Ser Leu Thr Ile Ser
 85 90 95

aac ctg gag tct gaa gat ttt gca gac tat tac tgt cta cag ttt tat 336
 Asn Leu Glu Ser Glu Asp Phe Ala Asp Tyr Tyr Cys Leu Gln Phe Tyr
 100 105 110

gac ttt ccg ctc acg ttc ggt gct ggg acc aag ctg gag ctg aaa cgg 384
 Asp Phe Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg
 115 120 125

<210> 29
 <211> 128
 <212> PRT
 <213> Mus musculus

<400> 29
 Met Arg Ala Pro Ala Gln Ile Phe Gly Phe Leu Leu Leu Trp Phe Pro
 1 5 10 15

Gly Ala Arg Cys Glu Ile Gln Met Thr Gln Ser Pro Ser Ser Met Ser
 20 25 30

20/25

Ala Ser Leu Gly Asp Arg Ile Thr Ile Thr Cys Gln Ala Thr Gln Asp
 35 40 45

Ile Val Lys Asn Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Pro Pro
 50 55 60

Ser Ile Leu Ile Tyr Tyr Ala Thr Glu Leu Ala Glu Gly Val Pro Ser
 65 70 75 80

Arg Phe Ser Gly Ser Gly Ser Gly Ser Asp Tyr Ser Leu Thr Ile Ser
 85 90 95

Asn Leu Glu Ser Glu Asp Phe Ala Asp Tyr Tyr Cys Leu Gln Phe Tyr
 100 105 110

Asp Phe Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg
 115 120 125

<210> 30
 <211> 420
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS
 <222> (1)..(420)

<400> 30
 atg gga tgg agc tat atc atc ttc ttt ctg gta gca aca gct aca ggt 48
 Met Gly Trp Ser Tyr Ile Ile Phe Phe Leu Val Ala Thr Ala Thr Gly
 1 5 10 15

gtg cac tcc cag gtc cag ctg cag cag tct ggg cct gag ctg gtg agg 96
 Val His Ser Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Arg
 20 25 30

cct ggg gtc tca gtg aag att tcc tgc aag ggt tcc ggc tac aca ttc 144
 Pro Gly Val Ser Val Lys Ile Ser Cys Lys Gly Ser Gly Tyr Thr Phe
 35 40 45

act gat tat gct acg cac tgg gtg agg cag agt cat gca aag agt cta 192
 Thr Asp Tyr Ala Thr His Trp Val Arg Gln Ser His Ala Lys Ser Leu
 50 55 60

gag tgg att gga gtt att agt agt tac tct ggt aat aca aag tac aac 240
 Glu Trp Ile Gly Val Ile Ser Ser Tyr Ser Gly Asn Thr Lys Tyr Asn
 65 70 75 80

cag aac ttt aag gac aag gcc aca atg act gta gac aaa tcc tcc agc 288
 Gln Asn Phe Lys Asp Lys Ala Thr Met Thr Val Asp Lys Ser Ser Ser
 85 90 95

aca gcc tat atg gaa ctt gcc aga ttg aca tct gag gat tct gcc atg 336
 Thr Ala Tyr Met Glu Leu Ala Arg Leu Thr Ser Glu Asp Ser Ala Met
 100 105 110

tat tac tgt gca aga tat gat tac gac gtc cgg tac tat gct atg gac 384
 Tyr Tyr Cys Ala Arg Tyr Asp Tyr Asp Val Arg Tyr Tyr Ala Met Asp
 115 120 125

tac tgg ggt caa gga acc tca gtc acc gtc tcc tca 420
 Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser
 130 135 140

<210> 31
 <211> 140
 <212> PRT
 <213> Mus musculus

<400> 31
 Met Gly Trp Ser Tyr Ile Ile Phe Phe Leu Val Ala Thr Ala Thr Gly
 1 5 10 15
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 20 25 30
 Pro Gly Val Ser Val Lys Ile Ser Cys Lys Gly Ser Gly Tyr Thr Phe
 35 40 45
 Thr Asp Tyr Ala Thr His Trp Val Arg Gln Ser His Ala Lys Ser Leu
 50 55 60
 Glu Trp Ile Gly Val Ile Ser Ser Tyr Ser Gly Asn Thr Lys Tyr Asn
 65 70 75 80
 Gln Asn Phe Lys Asp Lys Ala Thr Met Thr Val Asp Lys Ser Ser Ser
 85 90 95
 Thr Ala Tyr Met Glu Leu Ala Arg Leu Thr Ser Glu Asp Ser Ala Met
 100 105 110
 Tyr Tyr Cys Ala Arg Tyr Asp Tyr Asp Val Arg Tyr Tyr Ala Met Asp
 115 120 125
 Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser
 130 135 140

<210> 32
 <211> 8
 <212> PRT
 <213> Mus musculus

<400> 32
 Ser Asn Gly Asn Thr Tyr Leu Tyr
 1 5

<210> 33
 <211> 7
 <212> PRT
 <213> Mus musculus

<400> 33

Arg Met Ser Asn Leu Ala Ser
1 5

<210> 34

<211> 9

<212> PRT

<213> Mus musculus

<400> 34

Met Gln His Leu Glu Tyr Pro Phe Thr
1 5

<210> 35

<211> 5

<212> PRT

<213> Mus musculus

<400> 35

Thr Phe Gly Met Ser
1 5

<210> 36

<211> 17

<212> PRT

<213> Mus musculus

<400> 36

Thr Ile Asn Ser Asn Gly Gly Arg Thr Tyr Tyr Leu Asp Ser Val Lys
1 5 10 15

Gly

<210> 37

<211> 13

<212> PRT

<213> Mus musculus

<400> 37

Asp Gly Gly Leu Leu Arg Asp Ser Ala Trp Phe Ala Tyr
1 5 10

<210> 38

<211> 8

<212> PRT

<213> Mus musculus

<400> 38

Gly Asn Gly Asn Thr Tyr Leu Tyr
1 5

<210> 39

<211> 7

<212> PRT

<213> Mus musculus

<400> 39

Arg Met Ser Asn Leu Ala Ser

1

5

<210> 40

<211> 9

<212> PRT

<213> Mus musculus

<400> 40

Met Gln His Leu Glu Tyr Pro Phe Thr

1

5

<210> 41

<211> 5

<212> PRT

<213> Mus musculus

<400> 41

Ser Tyr Gly Met Ser

1

5

<210> 42

<211> 17

<212> PRT

<213> Mus musculus

<400> 42

Thr Ile Asn Ser Asn Gly Gly Arg Thr Tyr Tyr Leu Asp Ser Val Lys

1

5

10

15

Gly

<210> 43

<211> 13

<212> PRT

<213> Mus musculus

<400> 43

Asp Gly Gly Leu Leu Arg Asp Ser Ala Trp Phe Ala Tyr

1

5

10

<210> 44

<211> 11

<212> PRT

<213> Mus musculus

<400> 44

Gln Ala Thr Gln Asp Ile Val Lys Asn Leu Asn

1

5

10

<210> 45

<211> 7

<212> PRT

<213> Mus musculus

<400> 45

Tyr Ala Thr Glu Leu Ala Glu

1

5

<210> 46

<211> 9

<212> PRT

<213> Mus musculus

<400> 46

Leu Gln Phe Tyr Asp Phe Pro Leu Thr

1

5

<210> 47

<211> 5

<212> PRT

<213> Mus musculus

<400> 47

Asp Tyr Ala Thr His

1

5

<210> 48

<211> 9

<212> PRT

<213> Mus musculus

<400> 48

Val Ile Ser Ser Tyr Ser Gly Asn Thr

1

5

<210> 49

<211> 12

<212> PRT

<213> Mus musculus

<400> 49

Tyr Asp Tyr Asp Val Arg Tyr Tyr Ala Met Asp Tyr

1

5

10

<210> 50

<211> 3017

<212> DNA

<213> Homo sapiens

<400> 50

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agcggggcgca tgcccagcag ataagccagg caaacctcgg tgtgatcgaa gaagccaatt 60
tgagactcag cctagtccag gcaagctact ggcacctgct gctctcaact aacctccaca 120
caatggtggt cgcatttttg aaggtctttc tgatcctaag ctgccttgca ggtcagggtta 180
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